

CLAIMS

1. A method of resin sealing permanent magnets in a laminated rotor core comprising:

a first step of inserting the permanent magnets respectively in a plurality of magnet insertion holes in the laminated rotor core formed by a stack of a plurality of core pieces;

a second step of disposing the laminated rotor core between a lower die and an upper die, the lower die being provided for placing the laminated rotor core thereon, the upper die pairing with the lower die and having resin reservoir pots;

a third step of pressing and heating the laminated rotor core by the upper die and the lower die while heating and liquefying raw resin material put in the resin reservoir pots by the upper die; and

a fourth step of filling the magnet insertion holes of the laminated rotor core with the liquefied resin material from the upper die by ejecting the liquefied resin material from the resin reservoir pots by plungers, the plunger being inserted and moving vertically in the resin reservoir pots.

2. The method of resin sealing permanent magnets in a laminated rotor core as defined in claim 1, wherein the laminated rotor core has a shaft hole in a center thereof, and the laminated rotor core is disposed between the upper die and the lower die in a state that the laminated rotor core is placed on a carrier tray having a guide member fitted in the shaft hole of the laminated rotor core.

3. The method of resin sealing permanent magnets in a laminated rotor core as defined in claim 2, wherein the carrier tray is provided with lower vent grooves for release of air, the lower vent grooves being respectively in communication with lower ends of the magnet insertion holes.

4. The method of resin sealing permanent magnets in a laminated rotor core as

defined in one of claims 1 to 3, wherein the filling of the magnet insertion holes with the liquefied resin material is carried out with a difference in level between an upper end of the laminated rotor core and an upper end of each of the permanent magnets.

5. The method of resin sealing permanent magnets in a laminated rotor core as defined in claim 4, wherein the upper die is provided with upper vent grooves for release of air, the upper vent grooves being respectively in communication with upper ends of the magnet insertion holes.

6. The method of resin sealing permanent magnets in a laminated rotor core as defined in one of claims 1 to 5, wherein the resin reservoir pots provided in the upper die vertically penetrate the upper die.

7. The method of resin sealing permanent magnets in a laminated rotor core as defined in one of claims 1 to 6, wherein the resin material is a thermosetting resin and is thermally cured after being injected into the magnet insertion holes.

8. The method of resin sealing permanent magnets in a laminated rotor core as defined in one of claims 1 to 7, wherein the resin reservoir pots in the upper die are in a region radially inward of and different from positions of the magnet insertion holes as viewed from a top thereof, and the liquefied resin material is supplied to the magnet insertion holes from the resin reservoir pots through resin passages formed on an undersurface of the upper die.

9. The method of resin sealing permanent magnets in a laminated rotor core as defined in one of claims 1 to 8, wherein the laminated rotor core disposed between the upper die and the lower die in the second step is preheated.

10. The method of resin sealing permanent magnets in a laminated rotor core as defined in one of claims 1 to 9, wherein the laminated rotor core mounted on the lower

die is heated from outside by an induction heating means.